

WHAT IS CLAIMED IS:

1. A system, comprising:

a fuel dispenser position having a plurality of components;  
and

an agent facility operatively associated with said fuel

dispenser position;

said agent facility being configured to perform a monitoring function and/or a control function relative to said fuel dispenser position.

2. The system as recited in Claim 1, wherein said agent facility being configured further to: (i) receive event information from said fuel dispenser position; (ii) process the event information received from said fuel dispenser position;  
5 (iii) evaluate and/or analyze the processed event information; (iv) execute a maintenance task in accordance with the results of the evaluation and/or analysis; (v) execute a control task in accordance with the results of the evaluation and/or analysis; or  
(vi) perform any combination of steps (i)-(v).

3. The system as recited in Claim 1, wherein said agent facility being configured further to: (i) perform a diagnostic operation in relation to event information operatively received from said fuel dispenser position; and/or (ii) perform and/or  
5 direct a maintenance operation in relation to said fuel dispenser

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position, in accordance with the outcome of the diagnostic operation.

4. The system as recited in Claim 3, wherein the event information includes first data indicative of an event, and second data indicative of status, parameter value, condition, performance measure, or any combination thereof in relation to at least one component of said fuel dispenser position.

5. The system as recited in Claim 3, wherein the maintenance operation includes issuing command information adapted to reconfigure at least one component, issuing command information adapted to control at least one functional aspect of a fuel dispensing operation at said fuel dispenser position, issuing and/or scheduling a service call, issuing notification of a maintenance-ready condition, or any combination thereof.

6. The system as recited in Claim 1, wherein said agent facility being configured further to: (i) receive from said fuel dispenser position an event message indicative of an event occurring therein and/or event information pertaining to the event indicated by the event message; (ii) manipulate variable information associated with the event indicated by the event message, in accordance with the event message and/or the event information; (iii) evaluate the manipulated variable information; and (iv) execute at least one task in accordance with the evaluation results.

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7. The system as recited in Claim 6, wherein manipulation of the variable information involves adjustment of an event-related variable and/or an event-related counter, the event-related variable being indicative of an operating parameter and/or an operating condition of said fuel dispenser position, the event-related counter being indicative of a count of event occurrence.

8. The system as recited in Claim 6, wherein evaluation of the manipulated variable information involves analyzing the manipulated variable information relative to predetermined test information.

9. The system as recited in Claim 6, wherein execution of the at least one task involves directing the performance of at least one control task in said fuel dispenser position.

10. The system as recited in Claim 1, further comprises:

a variable table operatively associated with said agent facility, said variable table including a plurality of event-specific records, each record respectively including (i) an event indicator indicative of the respective event associated therewith, and (ii) variable information pertaining to the respective event; and

an event table operatively associated with said agent facility, said event table including a plurality of event-specific records, each record respectively including at least one of: (i) an event field indicative of an event associated with the record;

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(ii) an action type field providing instructions defining a data processing operation for performance in conjunction with relevant variable information from said variable table; (iii) a test type  
15 field providing instructions defining an analysis operation for performance in conjunction with results of the data processing operation; (iv) a test value field defining a predetermined test value for use in the analysis operation; and (v) an escalation  
20 execution depending upon the outcome of the analysis operation.

11. The system as recited in Claim 1, wherein said agent facility further comprises:

a means to receive event information from said fuel dispenser position;

5 a data facility including a plurality of information elements each associated with a respective event;

a processor, said processor being configured to process at least one information element of said data facility in accordance with the event information received from said fuel dispenser  
10 position; and

a rules facility, said rules facility including a plurality of rules each associated with a respective event, each rule respectively defining an evaluation function configured to evaluate the information processed by said processor and/or a

15   tasking function configured to execute at least one task in  
accordance with results of the evaluation function.

12.   The system as recited in Claim 11, wherein said rules  
facility having a programmable feature enabling selective  
modification of said plurality of rules, selective removal of  
rules, and/or selective addition of rules.

13.   The system as recited in Claim 1, wherein said agent  
facility further comprises:

        a means to receive event information from said fuel dispenser  
position;

5       a data facility including a plurality of information elements  
each associated with a respective event;

        a processor, said processor being configured to process at  
least one information element of said data facility in accordance  
with the event information received from said fuel dispenser

10   position; and

        a rules facility, said rules facility including a plurality  
of rules each associated with a respective event, each rule  
respectively defining: (i) a diagnostic function configured to  
perform a diagnostic operation in relation to information  
15   processed by said processor; (ii) a maintenance call operation  
configured to perform and/or direct the execution of at least one  
maintenance task pertaining to said fuel dispenser position, in  
accordance with the results of the diagnostic operation; (iii) a

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control operation configured to perform and/or direct the  
20 execution of at least one control task pertaining to said fuel  
dispenser position, in accordance with the results of the  
diagnostic operation; or (iv) any combination of (i)-(iii).

14. The system as recited in Claim 1, further comprises:

a remote facility including a management application, said  
remote facility being disposed apart from said fuel dispenser  
position, said management application being configured to enable  
5 management of at least one component of said fuel dispenser  
position in cooperation with said agent facility; and

a communications link between said agent facility and said  
remote facility.

15. The system as recited in Claim 14, wherein said agent  
facility including a client entity and said remote facility  
including a server entity.

16. The system as recited in Claim 15, wherein said agent  
facility and said remote facility being configured to perform  
management functions according to the Simple Network Management  
Protocol (SNMP) specification.

17. A system for use in a refueling environment, said  
refueling environment comprising a plurality of fuel dispenser  
positions each having a respective plurality of components, said  
system comprising:

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5 a management system configured to enable operative management  
of said refueling environment;

said management system including a management application in  
combination with an agent facility;

said agent facility being operatively arranged in a network  
10 management configuration with at least one fuel dispenser  
position.

18. The system as recited in Claim 17, wherein said agent  
facility being configured to: (i) perform a diagnostic operation  
in relation to event information operatively received from said  
refueling environment; and/or (ii) perform and/or direct a  
5 maintenance operation in relation to at least one fuel dispenser  
position, in accordance with the outcome of the diagnostic  
operation.

19. The system as recited in Claim 17, wherein said agent  
facility being configured to: (i) receive event information from  
said refueling environment; (ii) process the event information  
received from said refueling environment; (iii) evaluate and/or  
5 analyze the processed event information; (iv) execute a  
maintenance task in accordance with the results of the evaluation  
and/or analysis; (v) execute a control task in accordance with the  
results of the evaluation and/or analysis; or (vi) perform any  
combination of steps (i)-(v).

20. The system as recited in Claim 17, wherein said agent facility being configured to: (i) receive from said refueling environment at least one event message indicative of at least one event occurring therein and/or event information pertaining to the  
5 at least one event indicated by the at least one event message;  
(ii) manipulate variable information associated with the at least one event indicated by the at least one event message, in accordance with the at least one event message and/or the event information; (iii) evaluate the manipulated variable information;  
10 and (iv) execute at least one task in accordance with the evaluation results.

21. The system as recited in Claim 20, wherein manipulation of the variable information involves adjustment of an event-related variable and/or an event-related counter, the event-related variable being indicative of an operating parameter and/or  
5 an operating condition pertaining to at least one fuel dispenser position, the event-related counter being indicative of a count of event occurrence.

22. The system as recited in Claim 20, wherein evaluation of the manipulated variable information involves analyzing the manipulated variable information relative to predetermined test information.

23. The system as recited in Claim 20, wherein execution of the at least one task involves directing the performance of at



least one control task in relation to at least one fuel dispenser position.

24. The system as recited in Claim 17, further comprises:

a variable table operatively associated with said agent facility, said variable table including a plurality of event-specific records, each record respectively including an event indicator indicative of the respective event associated therewith and variable information pertaining to the respective event; and

an event table operatively associated with said agent facility, said event table including a plurality of event-specific records, each record respectively including at least one of: (i) an event field indicative of an event associated with the record; (ii) an action type field providing instructions defining a data processing operation for performance in conjunction with relevant variable information from said variable table; (iii) a test type field providing instructions defining an analysis operation for performance in conjunction with results of the data processing operation; (iv) a test value field defining a predetermined test value for use in the analysis operation; and (v) an escalation event field providing instructions defining at least one task for execution depending upon the outcome of the analysis operation.

25. The system as recited in Claim 17, wherein said agent facility further comprises:

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a means to receive event information from said refueling environment;

5 a data facility including a plurality of information elements each associated with a respective event;

a processor, said processor being configured to process at least one information element of said data facility in accordance with the event information received from said refueling

10 environment; and

a rules facility, said rules facility including a plurality of rules each associated with a respective event, each rule respectively defining an evaluation function configured to evaluate the information processed by said processor and/or a  
15 tasking function configured to execute at least one task in accordance with results of the evaluation function.

26. The system as recited in Claim 17, wherein said agent facility further comprises:

a means to receive event information from said refueling environment;

5 a data facility including a plurality of information elements each associated with a respective event;

a processor, said processor being configured to process at least one information element of said data facility in accordance with the event information received from said refueling

10 environment; and

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a rules facility, said rules facility including a plurality of rules each associated with a respective event, each rule respectively defining: (i) a diagnostic function configured to perform a diagnostic operation in relation to information

15 processed by said processor; (ii) a maintenance call operation configured to perform and/or direct the execution of at least one maintenance task in relation to at least one fuel dispenser position, in accordance with the results of the diagnostic operation; (iii) a control operation configured to perform and/or  
20 direct the execution of at least one control task in relation to at least one fuel dispenser position, in accordance with the results of the diagnostic operation; or (iv) any combination of (i) - (iii).

27. The system as recited in Claim 17, wherein said management application being disposed remote from said refueling environment and said agent facility being disposed within said refueling environment.

28. An apparatus, comprising:  
a fuel dispenser position; and  
an agent facility operatively associated with said fuel dispenser position.

29. The apparatus as recited in Claim 28, wherein said agent facility further comprises:

a means to receive event information from said fuel dispenser position;

5 a diagnostic test program operatively coupled to said receive means; and

a maintenance procedure program operatively associated with said diagnostic test program.

30. The apparatus as recited in Claim 28, wherein said agent facility further comprises:

a means to receive event information from said fuel dispenser position;

5 a data processor operatively coupled to said receive means; and

a data analyzer operatively coupled to said data processor.

31. The apparatus as recited in Claim 28, further comprises:

a fuel dispenser control program operatively associated with said agent facility.

32. The apparatus as recited in Claim 28, further comprises:

an event table operatively associated with said agent facility.

33. The apparatus as recited in Claim 32, further comprises:

a variable table operatively associated with said event table.

34. The apparatus as recited in Claim 33, wherein:

said variable table including a plurality of event-specific records, each record respectively including (i) an event indicator indicative of the respective event associated therewith, and (ii) variable information pertaining to the respective event; and

said event table including a plurality of event-specific records, each record respectively including at least one of: (i) an event field indicative of an event associated with the record; (ii) an action type field providing instructions defining a data processing operation involving variable information from said variable table; (iii) a test type field providing instructions defining an analysis operation in conjunction with results of the data processing operation; (iv) a test value field defining a predetermined test value for use in the analysis operation; and (v) an escalation event field providing instructions defining at least one task for execution depending upon the outcome of the analysis operation.

35. The apparatus as recited in Claim 28, wherein said agent facility further comprises:

a means to receive event information from said fuel dispenser position;

5 a data facility including a plurality of information elements each associated with a respective event;

a processor operatively associated with said receive means and said data facility; and

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a rules facility operatively associated with said processor,  
10 said rules facility including a plurality of rules each associated  
with a respective event, each rule respectively including a first  
set of executable instructions defining an evaluation procedure  
and a second set of executable instructions defining a management  
task, the management task including an executable control task  
15 and/or an executable maintenance task.

36. The apparatus as recited in Claim 28, wherein said agent  
facility further comprises:

a means to receive event information from said fuel dispenser  
position;

5 a data facility including a plurality of information elements  
each associated with a respective event;

a processor operatively associated with said receive means  
and said data facility; and

a rules facility operatively associated with said processor,  
10 said rules facility including a plurality of rules each associated  
with a respective event, each rule respectively including (i)  
first program code defining a diagnostic operation, (ii) second  
program code defining a maintenance operation in relation to said  
fuel dispenser position, and (iii) third program code defining a  
15 control operation in relation to said fuel dispenser position.

37. The apparatus as recited in Claim 28, further comprises:

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a remote facility including a management application, said remote facility being disposed apart from said fuel dispenser position; and

5 a communications link between said agent facility and said remote facility.

38. A method for use with a fuel dispenser position in combination with an agent facility, said method comprising the steps of:

the agent facility receiving event information from said fuel  
5 dispenser position;

the agent facility processing the event information received from said fuel dispenser position; and

the agent facility evaluating the processed event information.

39. The method as recited in Claim 38, further comprises the steps of:

the agent facility executing a maintenance task and/or a control task in accordance with results of the evaluation.

40. The method as recited in Claim 38, further comprises the step of:

the agent facility communicating the event information received from said fuel dispenser position and/or the evaluation  
5 results to a remote facility disposed apart from said fuel dispenser position.

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41. The method as recited in Claim 38, further comprises the step of:

the agent facility issuing control commands to said fuel dispenser position, in response to at least one directive received from a remote facility disposed apart from said fuel dispenser position.

42. The method as recited in Claim 38, further comprises the step of:

the agent facility performing at least one management task in relation to said fuel dispenser position, in response to at least one instruction received from a remote management application disposed apart from said fuel dispenser position.

43. The method as recited in Claim 38, wherein the processing step further comprises the steps of:

defining event-specific variable information;  
associating the variable information with the event information; and  
manipulating the variable information in accordance with the event information.

44. The method as recited in Claim 43, wherein the manipulation step further comprises the step of:

adjusting an event-related variable and/or an event-related counter, the event-related variable being indicative of an operating parameter and/or an operating condition of said fuel



dispenser position, the event-related counter being indicative of a count of event occurrence.

45. The method as recited in Claim 38, wherein the evaluation step further comprises the step of:

determining an allowability of the processed event information in comparative relation to reference information.

46. The method as recited in Claim 38, wherein the evaluation step further comprises the step of:

performing a rule-based analysis of the processed event information.

47. The method as recited in Claim 38, wherein the evaluation step further comprises the steps of:

defining a plurality of event-specific rules;

5 detecting an event based upon the event information received from said fuel dispenser position; and

applying the processed event information to at least one relevant one of said plurality of event-specific rules as specified by the detected event.

48. The method as recited in Claim 47, wherein each rule respectively defining: (i) a diagnostic function configured to perform a diagnostic operation in relation to the processed event information; (ii) a maintenance call operation configured to  
5 perform and/or direct the execution of at least one maintenance task pertaining to said fuel dispenser position, in accordance

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with the results of the diagnostic operation; (iii) a control operation configured to perform and/or direct the execution of at least one control task pertaining to said fuel dispenser position, 10 in accordance with the results of the diagnostic operation; or (iv) any combination of (i)-(iii).

49. The method as recited in Claim 47, wherein the rule definition step further comprises the step of:

constructing an event table including a plurality of event-specific records;

5 each event table record respectively including at least one of: (i) an event field indicative of an event associated with the record; (ii) an action type field providing instructions defining a data processing operation for performance in conjunction with event-specific variable information, the data processing operation 10 being used by the event information processing step; (iii) a test type field providing instructions defining an analysis operation for performance in conjunction with results of the data processing operation; (iv) a test value field defining a predetermined test value for use in the analysis operation; and (v) an escalation 15 event field providing instructions defining at least one task for execution depending upon the outcome of the analysis operation.

50. The method as recited in Claim 49, further comprises the step of:

constructing a variable table including a plurality of event-specific records;

5 each variable table record respectively including (i) an event indicator indicative of the respective event associated therewith, and (ii) event-specific variable information pertaining to the respective event.

51. The method as recited in Claim 38, wherein the evaluation step further comprises the steps of:

constructing a variable table including a plurality of event-specific records;

5 each variable table record respectively including (i) an event indicator indicative of the respective event associated therewith, and (ii) event-specific variable information pertaining to the respective event;

constructing an event table including a plurality of event-specific records, each event table record respectively defining an executable evaluation procedure;

10 each event table record respectively including at least one of: (i) an event field indicative of an event associated with the record; (ii) an action type field providing instructions defining  
15 a data processing operation for performance in conjunction with relevant variable information from the variable table, the data processing operation being used by the event information processing step; (iii) a test type field providing instructions

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defining an analysis operation for performance in conjunction with  
20 results of the data processing operation; (iv) a test value field  
defining a predetermined test value for use in the analysis  
operation; and (v) an escalation event field providing  
instructions defining at least one task for execution depending  
upon the outcome of the analysis operation; and  
25 utilizing the event table and the variable table to evaluate  
the processed event information by associating an event indicated  
by the event information with a relevant event-specific event  
table record and executing the corresponding evaluation procedure  
defined by the relevant event table record.

52. A method for use with a fuel dispenser position in  
combination with an agent facility, said method comprising the  
steps of:

the agent facility receiving event information from said fuel  
5 dispenser position; and

the agent facility performing a diagnostic test procedure in  
relation to the event information received from said fuel  
dispenser position.

53. The method as recited in Claim 52, further comprises the  
step of:

the agent facility performing a maintenance operation and/or  
a control operation in relation to said fuel dispenser position,

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5 in accordance with the results of the diagnostic test procedure performance.

54. The method as recited in Claim 52, wherein the diagnostic test procedure performance step further comprises the steps of:

defining a plurality of event-specific rules;

5 detecting an event based upon the event information received from said fuel dispenser position; and

causing at least one relevant one of said plurality of event-specific rules as specified by the detected event to process and/or evaluate the event information.

55. The method as recited in Claim 54, wherein the rule definition step further comprises the step of:

constructing an event table including a plurality of event-specific records;

5 each event table record respectively including at least one of: (i) an event field indicative of an event associated with the record; (ii) an action type field providing instructions defining a data processing operation for performance in conjunction with event-specific variable information; (iii) a test type field  
10 providing instructions defining an analysis operation for performance in conjunction with results of the data processing operation; (iv) a test value field defining a predetermined test value for use in the analysis operation; and (v) an escalation

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event field providing instructions defining at least one task for  
15 execution depending upon the outcome of the analysis operation.

56. The method as recited in Claim 55, further comprises the  
step of:

constructing a variable table including a plurality of event-  
specific records;

5 each variable table record respectively including (i) an  
event indicator indicative of the respective event associated  
therewith, and (ii) event-specific variable information pertaining  
to the respective event.

57. The method as recited in Claim 52, wherein the diagnostic  
test procedure performance step further comprises the steps of:

defining event-specific variable information;

5 associating the variable information with the event  
information;

manipulating the variable information in accordance with the  
event information; and

evaluating the manipulated variable information.

58. The method as recited in Claim 57, wherein the  
manipulation step further comprises the step of:

adjusting an event-related variable and/or an event-related  
counter, the event-related variable being indicative of an  
5 operating parameter and/or an operating condition of said fuel

dispenser position, the event-related counter being indicative of a count of event occurrence.

59. The method as recited in Claim 52, further comprises the step of:

the agent facility communicating the event information received from said fuel dispenser position and/or the evaluation results to a remote facility disposed apart from said fuel dispenser position.

60. The method as recited in Claim 52, further comprises the step of:

the agent facility issuing control commands to said fuel dispenser position, in response to at least one directive received from a remote facility disposed apart from said fuel dispenser position.

61. The method as recited in Claim 52, further comprises the step of:

the agent facility performing at least one management task in relation to said fuel dispenser position, in response to at least one instruction received from a remote management application disposed apart from said fuel dispenser position.

62. A computer program product for use in an agent facility having a computer environment, the agent facility operatively associated with a fuel dispenser position, the computer program product comprising a computer usable medium having computer

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5 readable program code thereon executable by the computer environment, the computer readable program code comprising:

first program code for processing event information operatively received by said agent facility from said fuel dispenser position; and

10 second program code for evaluating the processed event information.

63. The computer program product as recited in Claim 62, wherein the computer readable program code further comprises:

program code for executing a maintenance task and/or a control task relative to said fuel dispenser position, in  
5 accordance with the results of the evaluation provided by the second program code.

64. The computer program product as recited in Claim 62, wherein the computer readable program code further comprises:

program code for defining a plurality of executable event-specific rules;

5 program code for detecting an event based upon the event information received from said fuel dispenser position; and

program code for applying the processed event information to at least one relevant one of said plurality of event-specific rules as specified by the detected event for execution thereof.

65. The computer program product as recited in Claim 62, further comprises:



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a first data facility including a variable table having a plurality of event-specific records;

5 each variable table record respectively including (i) an event indicator indicative of the respective event associated therewith, and (ii) event-specific variable information pertaining to the respective event;

10 a second data facility including an event table having a plurality of event-specific records, each event table record respectively defining an executable evaluation procedure;

each event table record respectively including at least one of: (i) an event field indicative of an event associated with the record; (ii) an action type field providing instructions defining a data processing operation for performance in conjunction with relevant variable information from the variable table; (iii) a test type field providing instructions defining an analysis operation for performance in conjunction with results of the data processing operation; (iv) a test value field defining a predetermined test value for use in the analysis operation; and (v) an escalation event field providing instructions defining at least one task for execution depending upon the outcome of the analysis operation; and

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the second program code further includes third program code for utilizing the event table and the variable table to evaluate the processed event information by associating an event indicated

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by the event information with a relevant event-specific event table record and then executing the corresponding evaluation procedure defined by the relevant event table record.

66. A computer program product for use in an agent facility having a computer environment, the agent facility operatively associated with a fuel dispenser position, the computer program product comprising a computer usable medium having computer  
5 readable program code thereon executable by the computer environment, the computer readable program code comprising:

first program code for defining and performing a diagnostic test procedure in relation to event information received from said fuel dispenser position.

67. The computer program product as recited in Claim 66, wherein the computer readable program code further comprises:

program code for performing a maintenance operation and/or a control operation in relation to said fuel dispenser position, in  
5 accordance with the results of the diagnostic test procedure performance provided by said first program code.

68. The computer program product as recited in Claim 66, wherein the first program code further comprises:

program code for defining a plurality of executable event-specific rules;

5 program code for detecting an event based upon the event information received from said fuel dispenser position; and

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program code for causing at least one relevant one of said plurality of event-specific rules as specified by the detected event to process and/or evaluate the event information by  
10 execution thereof.

69. The computer program product as recited in Claim 66, wherein the first program code further comprises:

second program code for defining event-specific variable information;

5 third program code for associating the variable information with the event information;

fourth program code for manipulating the variable information in accordance with the event information; and

fifth program code for evaluating the manipulated variable  
10 information.

70. The computer program product as recited in Claim 69, wherein the fourth program code further comprises:

program code for adjusting an event-related variable and/or an event-related counter, the event-related variable being  
5 indicative of an operating parameter and/or an operating condition of said fuel dispenser position, the event-related counter being indicative of a count of event occurrence.

71. The computer program product as recited in Claim 66, further comprises:

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a first data facility including a variable table having a plurality of event-specific records;

5 each variable table record respectively including (i) an event indicator indicative of the respective event associated therewith, and (ii) event-specific variable information pertaining to the respective event;

10 a second data facility including an event table having a plurality of event-specific records, each event table record respectively defining an executable evaluation procedure;

each event table record respectively including at least one of: (i) an event field indicative of an event associated with the record; (ii) an action type field providing instructions defining  
15 a data processing operation for performance in conjunction with relevant variable information from the variable table; (iii) a test type field providing instructions defining an analysis operation for performance in conjunction with results of the data processing operation; (iv) a test value field defining a  
20 predetermined test value for use in the analysis operation; and (v) an escalation event field providing instructions defining at least one task for execution depending upon the outcome of the analysis operation; and

the first program code further includes program code for  
25 utilizing the event table and the variable table to process and evaluate the event information by associating an event indicated

by the event information with a relevant event-specific event  
table record and then executing the corresponding evaluation  
procedure defined by the relevant event table record.

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